

Elias Mapendo

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EDUCATION

San Diego State University | San Diego, CA

August 2023 - May 2025

Bachelor of Science in **Computer Science**, Minor in Mathematics

- Coursework: Data Structures, Algorithms, Artificial Intelligence, Software Systems, Operating Systems, Machine Learning, Deep Learning for NLP, Software Engineering, Computer Vision, Robotics, Applied Probability, Unix System Admin

SKILLS

Programming Languages: Java, C/C++, Python, Matlab

Libraries: NumPy, Pandas, SciPy, NLTK, scikit-learn, Keras, spaCy, Matplotlib, PyTorch, CuPy

Databases: MySQL, MongoDB, Google Cloud SQL

Tools & Frameworks: Spring Boot, Maven, JUnit 5, Google Test, Jupyter, Git, Pytest, Colab, Unix

Work EXPERIENCE

Digital Innovation Lab

Oct 2024 - Present

Backend Software Engineering Intern

San Diego, CA

- Designed and implemented a secure, scalable backend infrastructure using **Python**, **Django**, and **MySQL** to support an AI-driven digital transformation tool
- Integrated **OpenAI API** to provide real-time, context-aware insights using Retrieval-Augmented Generation technology
- Developed and deployed a cost-effective solution on **Azure**, eliminating the need for expensive external consultants by providing tailored, in-house insights.
- Implemented adaptive intelligence features, leveraging **AI/ML** to customize actionable recommendations based on unique organizational needs and readiness

Grossmont College

June 2023 - August 2023

Information Technology Support Specialist

El Cajon

- Collaborated with staff to develop a streamlined process for setting up campus computers, resulting in a reduction in setup time and improved efficiency
- Implemented regular maintenance schedules for campus computers, equipment, and printers, which decreased equipment downtime and increased overall productivity
- Diagnosed and resolved computer issues for over 100 students, faculty, and staff members

PROJECTS

Toxic Language Detection for Online Communities

San Diego

- Developed a multi-label text classification model using **Python**, Hugging Face's **transformers** library, and **scikit-learn** to identify toxic language in online comments, addressing categories like "toxic," "obscene," and "threat."
- Designed and implemented a **PyTorch** dataset class for integration of tokenized inputs and outputs into the training process
- Fine-tuned a **BERT**-based model on a custom dataset of **150K+** labeled comments, leveraging **BCEWithLogitsLoss** for multi-label classification with an **87%** accuracy
- Engineered a preprocessing pipeline to clean and tokenize text data, utilizing Python libraries for handling of noisy online text

Ice Cream Tracker

San Diego

- Developed backend services for an automated ice cream order management system, streamlining operations for order entry, inventory tracking, and shipment management using **Java** and **Spring Boot**.
- Designed and implemented a relational **MySQL** database schema, hosted on **Google Cloud SQL**, enabling seamless team-wide access and efficient data storage for complex order and inventory relationships.
- Leveraged **JPA** and **JDBC** for optimized database operations, ensuring efficient data retrieval and object-relational mapping for real-time updates across subsystems.
- Utilized **Maven** to manage dependencies and automate builds, enhancing development workflow and system reliability.
- Collaborated with cross-functional team members through **Git** and **GitHub** for version control and codebase integrity during iterative development cycles.

East County Cargo Transport

El Cajon

- Engineered a C++ payment processing module with encryption protocols and input validation, implementing comprehensive error handling and achieving 95% test coverage through **Google Test framework**
- Developed a robust database schema for efficient data management, utilizing **MySQL** for persistent storage of shipment records, payment transactions, and customer data
- Created an automated reporting system generating detailed digital receipts and shipping manifests, incorporating input validation and data sanitization for enhanced security